SCOTT

April 9, 1981

Mr. Richard A. Burkhalter
Department of Ecology
Industrial Section
M.S. PV-11
Olympia, WA 98504

Dear Mr. Burkhalter:

At the conclusion of our meeting with you and Mr. Johnson March 30, 1981, we offered to provide a summary of our discussions. This letter is being provided for that purpose.

Results of the February 24, 1981 bioassay on the four outfalls and the Benson sewer were confirmed. There were high mortality rates in 001, 003 and the Benson sewer. Tests on samples showed higher than normal zinc concentrations. Continuing investigation showed that the burning of scrap rubber with hog fuel in the power boilers was the source of zinc. The supply of scrap rubber was discontinued on March 4, 1981, and concentration of zinc in various streams at the boiler house and Outfalls 001 and 003 began declining--another indication that the source of zinc was the scrap rubber.

On March 10, 1981 another bioassay was run in conjunction with a survey being made by the DOE. The results were as follows at 65% concentration:

Stream	% Survival	% Mortality	Zinc ppm
Benson	5	95	0.430
001	100	0	0.630
003	0	100	0.550
004	100	0	--
008	67	33	--

Analysis by GC/MS did not disclose any significant levels of organics except in Outfall 008 where chloroform was found to be higher than previous tests.

Supply of scrap rubber continued to be curtailed and on March 14, 1981 another bioassay was conducted on Outfalls 001 and 003. The results were as follows:

Stream	% Conc.	% Survival	% Mortality	Zinc ppm
001	40	95	5	--
001	65	95	5	0.250
003	40	60	40	--
003	65	50	50	0.230

Burning of scrap rubber started again on Tuesday, March 17, 1981. Since then the concentration of zinc in Outfalls 001 and 003 has averaged about 2.2 ppm with a high of 4.3 ppm. Rubber has been consumed at the rate of approximately 25 tons/day during February and March except for the 10-day curtailment.

Concentration of zinc discharged from other point sources has been limited to 3 ppm. A 5 ppm concentration of zinc in both 001 and 003 would be equivalent to about 2.1 ppm in total mill discharge.

The zinc is in a much reduced volume before it is mixed with other streams. Zinc has its lowest solubility in the 9-11 pH range. Adjustment of pH in the streams which transport cinder cone and baghouse solids may be helpful in reducing zinc.

Mr. Burkhalter indicated that the effects of a combination of metals may be greater than the addition of the individual effects.

Burning of scrap rubber has advantages not only to Scott Paper Company in terms of energy benefits and in effective burning of secondary sludge but also to the general community. The accumulation of rubber tires has become a major solid waste problem for which burning can be a favorable solution.

It is proposed that Scott Paper Company

1. Investigate methods of handling cinder cone and baghouse solids.

2. Investigate methods for reducing zinc concentration in effluent discharge.

   a. Modification of flows.

   b. Precipitation of zinc.

3. Investigage further the possibility of other materials and other streams on the deleterious effects on the bioassay of Outfalls 001 and 003.

4. Continue checking on the levels of zinc versus the level of rubber burning.

5. Document occurrence and concentrations of other metals that could be synergistic with zinc.

Mr. Johnson requested that we provide a statement of plans and policy for demister candles. In response to this, I can say that replacement candles for the center box have been job requested and will be ordered as soon as approved. Beyond this, we have an established policy that six to 10 candles are maintained in Stores to provide for emergency replacements.

We appreciated the opportunity that your plant visit provided to review these areas of mutual interest.

Sincerely,

A. Murl Miller

A. Murl Miller
Manager of Environmental Resources

AMM/hc

cc: Mr. Bruce E. Johnson, DOE
Mr. C. H. Baldwin
Mr. F. D. Huillet
Mr. (b) (6)